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SEQUENCE LISTING

<110> King, Kendall W Madura, Rebecca A Rosey, Everett L <130> PC10555

<120> NUCLEIC ACIDS AND PROTEINS OF THE MYCOPLASMA PNEUMONIAE mhp3 GENE AND USES THEREOF

<150> US 60/156,602 <151> 1999-09-29 <160> 41 <170> PatentIn Ver. 2.1

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<213> Mycoplasma hyopneumoniae

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aattttcttc taatttagtt taatttaata taaaattata ttaaattaaa aaaataaaa 1560 atcoggacta tttttgttcc ggatttttta tttttgtgtt actatttaat ataatgataa 1620 atcaggatta tgcaattgaa tttattcaag tctcgaaaaa atttggcagt ttttatgcca 1/1680 attacaaaat ag

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Glu Thr Thr Lys Glu Glu Lys Ser Ala Asp Asn Gln Asn Lys Gln Ile 35 40 45

Thr Asp Val Ser Lys Ile Ser Gly Leu Val Asn Glu Arg Lys Ser Glu 50 55 60

Ile Met Ala Ala Lys Ala Asp Ala Asn Lys His Phe Gly Leu Asn Met 65 70 75 80

Ala Ile Val Thr Ala Gly Gly Thr Val Asn Asp Asn Ser Phe Asn Gln 85 90 95

Ser Ser Trp Glu Ala Ile Gln Gln Leu Gly Ala Leu Thr Gly Glu 100 105 110

Ile Thr Ser Val Asp Ser Ser Thr Ala Glu Leu Glu Gly Lys Tyr Ser 115 `120 125

Ser Leu Ala Asn Thr Asn Lys Asn Val Trp Val Leu Ser Gly Phe Gln 130 135 140

His Gly Asp Ala Phe Thr Arg Trp Leu Lys Ile Pro Glu Asn Lys Gln 145 150 155 160

Leu Phe Thr Glu Lys Asn Ile Ile Ile Leu Gly Ile Asp Trp Thr Asp 165 170 175

Thr Glu Asn Val Ile Pro Thr Gly Arg Tyr Ile Asn Leu Thr Tyr Lys 180 185 190

Thr Glu Glu Ala Gly Trp Leu Ala Gly Tyr Ala Asn Ala Ser Phe Leu 195 200 205

Ala Lys Lys Phe Pro Ser Asp Pro Thr Lys Arg Ser Ala Ile Val Ile 210 215 220

Gly Gly Gly Ile Ser Pro Ala Val Thr Asp Phe Ile Ala Gly Tyr Leu 225 230 235 240

Ala Gly Ile Lys Ala Trp Asn Leu Lys Asn Ser Asp Lys Lys Thr Lys 245 250 255

Ile Thr Thr Asp Lys Ile Glu Ile Asn Leu Gly Phe Asp Val Gln Asp

260 265 270 Thr Ser Thr Lys Glu Arg Leu Glu Gln Ile Ala Ser Lys Asp Lys Pro 275 280 Ser Thr Leu Leu Ala Val Ala Gly Pro Leu Thr Glu Ile Phe Ser Asp Ile Ile Ala Asn Gln Asn Asp Arg Tyr Leu Ile Gly Val Asp Thr Asp Gln Ser Leu Val Tyr Thr Lys Thr Lys Asn Lys Phe Phe Thr Ser Ile Leu Lys Asn Leu Gly Tyr Ser Val Phe Ser Val Leu Ser Asp Leu Tyr Thr Lys Lys Ser Asn Ser Arg Asn Leu Ala Gly Phe Glu Phe Gly Lys Lys Ser Ala Thr Val Tyr Leu Gly Ile Lys Asp Arg Phe Val Asp Ile 370 380 Ala Asp Thr Ser Leu Glu Gly Asn Asp Lys Lys Leu Ala Thr Glu Ala Ile Ser Glu Ala Lys Lys Glu Phe Glu Glu Lys Thr Lys Thr Ile Pro 410 Ala Glu Glu Val Arg Lys Thr Leu Glu Ile Pro Glu Met Pro Asp Lys 425 Gln Pro Asp Lys Gln Gln Glu Ser Leu Asp Lys Leu Ile Thr Asp Ile

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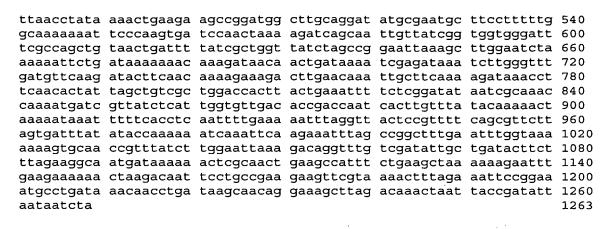
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 manipulated for in vitro expression

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Arg Lys Ser Glu Ile Met Ala Ala Lys Ala Asp Ala Asn Lys His Phe 35 40 45

Gly Leu Asn Met Ala Ile Val Thr Ala Gly Gly Thr Val Asn Asp Asn 50 55 60

Ser Phe Asn Gln Ser Gly Trp Glu Ala Ile Gln Gln Leu Gly Ala Leu 65 70 75 80

Thr Gly Gly Glu Ile Thr Ser Val Asp Ser Ser Thr Ala Glu Leu Glu 85 90 95

Gly Lys Tyr Ser Ser Leu Ala Asn Thr Asn Lys Asn Val Trp Val Leu 100 105 110

Ser Gly Phe Gln His Gly Asp Ala Phe Thr Arg Trp Leu Lys Ile Pro 115 120 125

Glu Asn Lys Gln Leu Phe Thr Glu Lys Asn Ile Ile Ile Leu Gly Ile 130 135 140

Asp Trp Thr Asp Thr Glu Asn Val Ile Pro Thr Gly Arg Tyr Ile Asn 145 150 155 160

Leu Thr Tyr Lys Thr Glu Glu Ala Gly Trp Leu Ala Gly Tyr Ala Asn

165 170 175 Ala Ser Phe Leu Ala Lys Lys Phe Pro Ser Asp Pro Thr Lys Arg Ser 180 185 Ala Ile Val Ile Gly Gly Ile Ser Pro Ala Val Thr Asp Phe Ile 200 Ala Gly Tyr Leu Ala Gly Ile Lys Ala Trp Asn Leu Lys Asn Ser Asp Lys Lys Thr Lys Ile Thr Thr Asp Lys Ile Glu Ile Asn Leu Gly Phe Asp Val Gln Asp Thr Ser Thr Lys Glu Arg Leu Glu Gln Ile Ala Ser 250 Lys Asp Lys Pro Ser Thr Leu Leu Ala Val Ala Gly Pro Leu Thr Glu Ile Phe Ser Asp Ile Ile Ala Asn Gln Asn Asp Arg Tyr Leu Ile Gly 275 280 285 Val Asp Thr Asp Gln Ser Leu Val Tyr Thr Lys Thr Lys Asn Lys Phe Phe Thr Ser Ile Leu Lys Asn Leu Gly Tyr Ser Val Phe Ser Val Leu Ser Asp Leu Tyr Thr Lys Lys Ser Asn Ser Arg Asn Leu Ala Gly Phe Glu Phe Gly Lys Lys Ser Ala Thr Val Tyr Leu Gly Ile Lys Asp Arg Phe Val Asp Ile Ala Asp Thr Ser Leu Glu Gly Asn Asp Lys Lys Leu 360 Ala Thr Glu Ala Ile Ser Glu Ala Lys Lys Glu Phe Glu Glu Lys Thr 375 Lys Thr Ile Pro Ala Glu Glu Val Arg Lys Thr Leu Glu Ile Pro Glu 390 Met Pro Asp Lys Gln Pro Asp Lys Gln Glu Ser Leu Asp Lys Leu 410 Ile Thr Asp Ile Asn Xaa Xaa 420

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<213> Mycoplasma hyopneumoniae

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Thr Phe Leu Leu Val Leu Ala Ser Glu Leu Tyr Phe Pro Ser Ser Ser 35 40 45

Ala Val Glu Leu Ser Thr Glu Val Ile Ser Pro Pro Val Arg Ala Pro 50 55 60

Ser Cys Trp Ile Ala Ser Gln Leu Asp Trp Leu Asn Glu Leu Ser Phe 65 70 75 80

Thr Val Pro Pro Ala Val Thr Ile Ala Ile Phe Ser Pro Lys Cys Leu 85 90 95

Phe Ala Ser Ala Phe Ala Ala Ile Ile Ser Asp Phe Arg Ser Leu Thr 100 105 110

Ser Pro Glu Ile Phe Glu Thr Ser Val Ile Cys Leu Phe Trp Leu Ser 115 120 125

Ala Asp Phe Ser Ser Leu Val Val Ser Leu Ser Gln His Pro Ala Glu 130 135 140

Ile Val Ala Ile Ala Glu Ser Gly Lys Thr Lys Pro Lys Pro Arg Asn 145 150 155 160

Leu Phe His Phe Ile Phe Phe Ile Val Val Leu Leu Ile Asn Cys 165 170 175

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Trp Val Arg Lys Tyr
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30

<210> 11

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| -27.0: | 15 | | |
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| <210> | 26 | | |
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| | origonacieociae | | |
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20 25 30

| Gly | Lys | Ile 35 | Ile | Arg | Ile | Phe | Asp 40 | Asn | Ser | Phe | Val | Lys 45 | Asp | Arg | Glr |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Ala | Glu 50 | Ile | Glu | Lys | Ala | Lys 55 | Asn | Phe | Asp | Phe | Asn 60 | Thr | Val | Leu | Leu |
| Thr 65 | Ala | Gly | Gly | Thr | Val 70 | Gln | Asp | Lys | Ser | Phe 75 | Asn | Gln | Ser | Ile | Trp 80 |
| Glu | Ala | Val | Leu | Glu 85 | His | Tyr | Asp | Gln | Ile 90 | Glu | Lys | Thr | Thr | Asn 95 | Leu |
| Asp | Arg | Val | Ser 100 | Gln | Glu | Thr | Asn | Asn 105 | Gln | Ser | Glu | Leu | Ile 110 | Gly | Lys |
| Tyr | Lys | Asn 115 | Phe | Leu | Asn | Gly | Asn 120 | Lys | Asn | Val | Trp | 11e 125 | Leu | Thr | Gly |
| Phe | Gln 130 | Gln | Gly | Gln | Glu | Phe 135 | Pro | Lys | Phe | Leu | Lys 140 | Gln | Thr | Asp | Ser |
| Asn 145 | Gly | Lys | Lys | Tyr | Ser 150 | Asp | Leu | Leu | Ala | Glu 155 | Lys | Lys | Val | Ile | 11e |
| Val | Ala | Val | Asp | Trp 165 | Asp | Leu | Ser | Lys | Glu 170 | Asp | Lys | Asp | Leu | Ile 175 | Lys |
| Ala | Gly | His | Phe 180 | Ile | Ser | Leu | Leu | Tyr 185 | Lys | Thr | Glu | Glu | Ala 190 | Gly | Ph∈ |
| Ile | Ala | Gly 195 | Tyr | Ala | Ser | Ser | Lys 200 | Phe | Leu | Ala | Tyr | Lys 205 | Phe | Pro | Asn |
| Asp | Glu 210 | Ala | Lys | Arg | Thr | Ile 215 | Ala | Pro | Phe | Gly | Gly 220 | Gly | His | Gly | Ala |
| Gly 225 | Val | Thr | Asp | Phe | Ile 230 | Ala | Gly | Phe | Leu | Ala 235 | Gly | Ile | Ala | Lys | Туг 240 |
| Asn | Asn | Asp | Asn | Pro 245 | Thr | Ala | Lys | Val | Thr 250 | Ile | Ser | Asp | Asn | Asn 255 | Ile |
| Asn | Ile | Asp | Thr 260 | Gly | Phe | Ile | Ser | Asn 265 | Asp | Lys | Thr | Ala | Thr 270 | Phe | Ile |
| Asn | Gly | Ile 275 | Val | Asn | Lys | Ser | Ser 280 | Leu | Val | Leu | Pro | Val 285 | Ala | Gly | Sei |
| Leu | Thr 290 | Ser | Ser | Val | Val | Asp 295 | Ala | Ile | Lys | Lys | Ser 300 | Asn | Lys | Asp | Thr |
| Lys 305 | Tyr | Leu | Ile | Gly | Val 310 | Asp | Thr | Asp | Gln | Ser 315 | Lys | Ile | Phe | Ser | Pro 320 |
| Δla | Thr | Val | Phe | Phe | Thr | Ser | Tle | Glu | Lvs | His | Leu | Glv | Ara | Thr | T14 |

325 330 335

Tyr Gln Val Leu Thr Asp Ile Trp Leu Lys Lys Glu Asp Ser Lys Phe 340 345 350

Leu Gly Ser Phe Arg Ser Phe Lys Leu Thr Asn Pro Ala Asn Ala Thr 355 360 365

Val Tyr Lys Gly Ile Ser Asp Asp Phe Val Gly Val Ser Asn Ser Thr 370 375 380

Val Ala Asp Ala Asp Lys Val Lys Ala Gln Glu Phe Leu Asn Glu Ala 385 390 395 400

Thr Ala Asp Phe Lys Lys Gln Ile Gln Ala Asn Pro Thr Asn Tyr Lys
405 410 415

Ser Val Leu Gly Ile Pro Thr Met Leu Ile Asn Asp Asn Asp Ala Lys 420 425 430

Asp Asn Glu Lys Ala Ser Leu Phe His Phe Asp Asn Trp Gln Thr Tyr 435 440 445

Trp Ala Phe His Ser Arg Phe Ile Asn 450 455